B.E./B.TECH. Degree Examination, December 2020

Semester - VI

AE16603 Automotive Pollution and control

(Regulation 2016)

Time: Three hours Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. The pollutants responsible for the cause of SMOG are
   (a) From incinerators
   (b) Emissions from vehicles
   (c) Both incinerators and emissions from vehicles
   (d) None of the above

2. The main reason behind the formation of UBHC in SI engines is
   (a) more air
   (b) High temperature
   (c) liquid fuel in the cylinder
   (d) All of the above

3. A single soot particle may contain up to _____ carbon spheres.
   (a) 600
   (b) 5000
   (c) 6000
   (d) 8000

4. Catalytic converters use lambda sensors to keep
   (a) exhaust temperature constant
   (b) exhaust pressure constant
   (c) excess air ratio within a range
   (d) flow rate of air constant

5. When do the emissions become pollutant? Give example for it.
6. What explanation do you have for equivalence ratio?
7. Give your views on canister and its usage.
8. How will you brief the use of chassis dynamometer?

PART B - (4 X16 = 64 marks)

9. (a) Distinguish the formation of various pollutants and its effects on human health and environment **(16)**

(OR)

(b) Discuss the reasons for the transient operational effect on pollution formation in an IC engine. **(16)**

10. (a) Discuss the stages of combustion in SI engines. **(16)**

(OR)

(b) What explanation do you have for the different sources for the formation of HC in SI engines? **(16)**

11. (a) Discuss in your views the problems associated with oxides of nitrogen and the controlling methods. **(16)**

(OR)

(b) Illustrate a three way catalytic convertor and its significance on emission control. **(16)**

12. (a) Suggest an instrument for measuring the CO emission in the exhaust gas and explain its operation. **(16)**

(OR)

(b) Identify and explain a suitable method for finding chemical components of a sample gas mixture which is used to detect the presence or absence of elements of the exhaust gas. **(16)**